September 29, 2003

Mr. Lew W. Myers
Chief Operating Officer
FirstEnergy Nuclear Operating Company
Davis-Besse Nuclear Power Station
5501 North State Route 2
Oak Harbor, OH 43449-9760

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1 - ISSUANCE OF AMENDMENT (TAC NO. MB1679)

Dear Mr. Myers:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 259 to Facility Operating Licence NPF-3 for the Davis-Besse Nuclear Power Station, Unit No. 1. This amendment revises the Technical Specifications (TS) in response to your application dated April 1, 2001, as supplemented by letters dated April 30, 2003, and May 6, 2003.

This amendment revises TS 3/4.3.1, “Reactor Protection System Instrumentation,” TS 3/4.3.2.1, “Safety Features Actuation System (SFAS) Instrumentation,” and TS 3/4.3.2.2, “Steam and Feedwater Rupture Control System (SFRCS) Instrumentation.” The proposed changes to TS Table 3.3-3, “SFAS Instrumentation,” and Table 3.3-11, “SFRCS Instrumentation,” will allow an 8-hour delay in entering an action statement when an SFAS or SFRCS instrumentation channel is undergoing channel functional testing, and will clarify the term “total bypass function” for Surveillance Requirement (SR) 4.3.1.1.2, SR 4.3.2.1.2, and SR 4.3.2.2.2. In addition, the proposed changes will revise Bases 3/4.3.1 and 3/4.3.2 to reflect the above-described TS changes.

A copy of the Safety Evaluation is enclosed. The notice of Issuance will be included in the Commission’s next biweekly *Federal Register* notice.

Sincerely,

/RA by DPickett for/

Stephen P. Sands, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-346

Enclosures: 1. Amendment No. 259 to License No. NPF-3
2. Safety Evaulation

cc w/encls: See next page

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Davis-Besse Nuclear Power Station, Unit 1

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FIRSTENERGY NUCLEAR OPERATING COMPANY

DOCKET NO. 50-346

DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 259
License No. NPF-3

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by the FirstEnergy Nuclear Operating Company (the licensee) dated April 1, 2001, as supplemented by letter dated April 30, 2003, and May 6, 2003, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-3 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 259, are hereby incorporated in the license. FirstEnergy Nuclear Operating Company shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance and shall be implemented within 120 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA by LRaghavan for/

Anthony J. Mendiola, Chief, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: September 29, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 259

FACILITY OPERATING LICENSE NO. NPF-3

DOCKET NO. 50-346

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove	Insert
3/4 3-1	3/4 3-1
3/4 3-9	3/4 3-9
3/4 3-12	3/4 3-12
3/4 3-23	3/4 3-23
3/4 3-27	3/4 3-27
B 3/4 3-1	B 3/4 3-1
B 3/4 3-1a	B 3/4 3-1a

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 259 TO FACILITY OPERATING LICENSE NO. NPF-3

FIRSTENERGY NUCLEAR OPERATING COMPANY

DAVIS-BESSE NUCLEAR POWER STATION

DOCKET NO. 50-346

1.0. INTRODUCTION

In a letter dated April 1, 2001, as supplemented by letter dated April 30, and May 6, 2003, FirstEnergy, the licensee for the Davis-Besse Nuclear Power Station, Unit 1, requested the Nuclear Regulatory Commission's (NRC's) approval to amend Operating License NPF-3. The supplemental letters contained clarifying information and did not change the initial no significant hazards consideration determination and did not expand the scope of the original *Federal Register* notice. The proposed changes involve Technical Specification (TS) 3/4.3.1, "Reactor Protection System (RPS) Instrumentation," TS 3/4.3.2.1, "Safety Features Actuation System (SFAS) Instrumentation," and TS 3/4.3.2.2, "Steam and Feedwater Rupture Control System (SFRCS) Instrumentation." The proposed changes to TS Table 3.3-3, "SFAS Instrumentation," and Table 3.3-11, "SFRCS Instrumentation," will allow an 8-hour delay in entering an action statement when an SFAS or SFRCS instrumentation channel is undergoing channel functional testing, and will clarify the term "total bypass function" for Surveillance Requirement (SR) 4.3.1.1.2, SR 4.3.2.1.2, and SR 4.3.2.2.2. In addition, the proposed changes will revise Bases 3/4.3.1 and 3/4.3.2 to reflect the above-described TS changes.

2.0 REGULATORY EVALUATION

Section 182a of the Atomic Energy Act (Act) requires applicants for nuclear power plant operating licenses to include TSs as part of the license. These TS are derived from the plant safety analyses.

The staff has reviewed the proposed changes for compliance with 10 CFR 50.36 and agreement with the precedent as established in NUREG-1430. In general, licensees cannot justify TS changes solely on the basis of adopting the model standard technical specifications (STS). To ensure this, the staff makes a determination that proposed changes maintain adequate safety. There are two classes of changes to the TS: (1) changes needed to reflect contents of the design basis, and (2) voluntary changes to take advantage of the evolution in policy and guidance as to the required content and preferred format of TS over time. This license amendment request (LAR) deals with both classes of changes: (1) revising the SFAS and SFRCS reflects the contents of the design basis, and (2) providing reasonable time to perform the required surveillance testing and relieve the control room staff burden of making multiple Action statements entries and exits in order to complete testing, is a voluntary change that takes advantage of the content and preferred format of TS. The staff referred to NUREG 0800, "Standard Review Plan," for guidance regarding the review criteria. The staff also used the accumulation of generically approved guidance in NUREG-1430, Revision 2, "Standard Technical Specifications, Babcock and Wilcox Plants," dated October 10, 2001.

Licensees may revise the TS to adopt current improved STS format and content provided that plant-specific review supports a finding of continued adequate safety because: (1) the change is editorial, administrative, or provides clarification (i.e., no requirements are materially altered), (2) the change is more restrictive than the licensee's current requirement, or (3) the change is less restrictive than the licensee's current requirement, but nonetheless still affords adequate assurance of safety when judged against current regulatory standards. The detailed application of this general framework, and additional specialized guidance, are discussed in Section 3.0 in the context of specific proposed changes.

3.0 BACKGROUND

In its submittal, the licensee stated that the proposed changes would provide a reasonable time to perform the required surveillance testing and relieve the control room staff of the burden of making multiple action statement entries and exits to complete the testing. The proposed changes will be implemented within 120 days of the staff's approval.

4.0 PROPOSED CHANGES AND TECHNICAL EVALUATION

4.1.1 Proposed change: Table 3.3-3, "Safety Features Actuation System Instrumentation." Revise Action 10 to read:

> "With the number of OPERABLE functional units one less than the Total Number of Units, STARTUP and/or POWER OPERATION may proceed provided, within one hour (except as noted below), the inoperable functional unit is placed in the tripped condition. When one functional unit is placed in an inoperable status solely for performance of a CHANNEL FUNCTIONAL TEST, a declaration of inoperability and associated entry into this ACTION statement may be delayed for up to 8 hours, provided at least two other channels are OPERABLE."

4.1.2 Proposed change: Table 3.3-11, "Steam and Feedwater Rupture Control System Instrumentation." Revise Action 16 to read:

> "With the number of OPERABLE Channels one less than the total number of channels, STARTUP and/or POWER OPERATION may proceed until performance of the next required CHANNEL FUNCTIONAL TEST provided the inoperable section of the channel is placed in the tripped condition within 1 hour (except as noted below). When a channel is placed in an inoperable status solely for performance of a CHANNEL FUNCTIONAL TEST, a declaration of inoperability and associated entry into this ACTION statement may be delayed for up to 8 hours, provided the remaining actuation channel is OPERABLE."

Evaluation: The SFAS has 4 channels. Its trip logic is based on 2-out-of-4 selection. In case a channel is bypassed or inoperable, the trip logic is reduced to 2-out-of-3. The SFRCS consists of two actuation channels, each of which contains two logic channels. For SFRCS actuation to occur, both logic channels in either actuation channel must trip.

In accordance with the current TS requirements when a channel is placed in bypass for performing a channel functional test, it is declared inoperable, and the action statement is entered immediately. The current Action 10 and Action 16 requires, that an inoperable channel be placed in the tripped condition within 1 hour. Therefore, if the channel functional test can not be completed within 1 hour, either the test has to be aborted and the channel restored to operable condition (the bypass removed) or the channel has to be placed in the tripped state. Thus, from the time a channel is bypassed to perform functional test, it must be placed in the tripped condition within 1 hour (even if testing is not completed within the hour).

If a channel is tripped, current TS 3.0.6 may be invoked, and the system may be returned to service to complete the test. TS 3.0.6 states:

> "Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or OPERABILITY of other equipment. This is an exception to Specification 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY."

The proposed change would eliminate the requirement to immediately enter Action 10 of TS Table 3.3-3 for SFAS channels or Action 16 of TS Table 3.3-11 for SFRCS channels during channel functional testing and subsequently entering TS 3.0.6 even if the test exceeds 1 hour, provided at least two other corresponding channels (i.e., channels of the same functional unit) are operable for SFAS, and at least both logic-channels of the redundant actuation channel (which is not being tested) are operable for the SFRCS. In its submittal, the licensee stated that because the proposed change does not increase the time required to perform the channel functional test, the cumulative time that the channel is incapable of performing its designed safety function would not be affected. The proposed change is similar to engineered safety features actuation system Surveillance Requirement 3.3.5.2 of NUREG-1430, "Standard Technical Specifications - Babcock and Wilcox Plants," Revision 1, April 1995, which allows up to 8 hours delay in entering required actions when performing channel functional testing. In addition, the proposed change requires the licensee to confirm the operability of at least other two SFAS channels and the operability of at least both logic-channels of the redundant SFRCS actuation channel (which is not being tested). This requirement, in conjunction with the requirement to trip an inoperable channel, ensures that the single-failure criterion is met when the channel being tested is placed in bypass. The risk to operations for delaying entry into the ACTION statement for up to 8 hours was provided in a FirstEnergy Nuclear Operating Company (FENOC) letter, dated May 6, 2003, which stated that the ΔCDF (core damage frequency) is within the Regulatory Guide (RG) 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions," risk guidelines for placing the channel in bypass for an 8-hour period.

The licensee further stated that the proposed change would relieve the control room staff of the burden of making multiple action statements entries and exits. It would also alleviate the time pressure for operators to complete the testing within a short period to avoid a tripped-channel configuration. Also, delaying the entry to action statement would reduce the likelihood of putting a channel into a tripped condition and making the plant more

vulnerable to system actuation due to a spurious trip of an second instrumentation channel. The staff finds the proposed change acceptable.

4.2.1 Proposed change: LCO 3.3. 1. 1, "Reactor Protection System Instrumentation." Revise LCO 3.3.1.1 to state:

> "As a minimum, the Reactor Protection System instrumentation channels and shutdown bypasses of Table 3.3-1 shall be OPERABLE. "

4.2.2 Proposed change: Revise SR 4.3.1.1.2 to state:

> "The shutdown bypass function shall be demonstrated OPERABLE at least once per REFUELING INTERVAL during CHANNEL CALIBRATION testing of each channel affected by shutdown bypass operation."

Evaluation: In its submittal, the licensee stated that LCO 3.3.1.1 currently refers to "bypasses," and TS surveillance requirement (SR) 4.3.1.1.2 currently refers to the "total bypass function." The wording currently used in the SR was originally based on NUREG-0103, "Standard Technical Specifications for Babcock and Wilcox Pressurized Water Reactors," Revision 0. This wording was revised in Revision 4 of NUREG-0103, and comparable wording does not exist in NUREG-1430. The proposed changes to limiting condition for operation (LCO) 3.3.1.1 and SR 4.3.1.1.2 clarify that the bypass function being referred to is "the shutdown bypass." Consistent with this clarification, testing to comply with the total bypass function requirement of SR 4.3.1.1.2 is accomplished by verifying that the shutdown bypass high-pressure trip occurs when reactor coolant system (RCS) pressure is above the TS setpoint. The proposed change is an administrative change and is acceptable to the staff.

4.3 Proposed change: Revise SR 4.3.2.1.2 to state:

> "The logic for the RCS pressure operating bypasses shall be demonstrated OPERABLE during the power CHANNEL FUNCTIONAL TEST of functional units affected by the RCS pressure operating bypass operation. This RCS pressure operating bypass function shall be demonstrated OPERABLE at least once per REFUELING INTERVAL during CHANNEL CALIBRATION testing of each functional unit affected by the RCS pressure operating bypass operation."

Evaluation: In its submittal, the licensee stated that the proposed change would clarify that the term "total bypass function" for SFAS in current TS SR 4.3.2.1.2 refers to the RCS pressure operating bypass. The wording presently used in the SR was originally based on NUREG-0103, Revision 0, which was later revised in Revision 4, and comparable wording does not exist in NUREG-1430. The RCS pressure operating bypass is the only SFAS bypass referred to in TS Table 3.3-3 (Table Notations "*" and "**"). Consistent with this clarification, testing to comply with the total bypass function requirement of SR 4.3.2.1.2 is accomplished by verifying that the two RCS pressure operating bypasses cannot be added prior to decreasing below appropriate TS values, and that the bypasses are automatically removed prior to exceeding the appropriate TS values. The proposed change is an administrative change and is acceptable to the staff.

4.4 Proposed change: Revise SR 4.3.2.2.2 to state:

> "The logic for the shutdown bypasses shall be demonstrated OPERABLE during the power CHANNEL FUNCTIONAL TEST of channels affected by bypass operation. The shutdown bypass function shall be demonstrated OPERABLE at least once per REFUELING INTERVAL during CHANNEL CALIBRATION testing of each channel affected by bypass operation."

Evaluation: In its submittal, the licensee stated that the proposed change would clarify that the term "total bypass function" for SFAS in current TS SR 4.3.2.2.2 refers to the shutdown bypass. The wording presently used in the SR was originally based on NUREG-0103, Revision 0, which was later revised in Revision 4, and comparable wording does not exist in NUREG-1430. The shutdown bypass is the only SFRCS bypass referred to in TS Table 3.3-11 (Table Notation "*"). Consistent with this clarification, testing to comply with the total bypass function requirement of SR 4.3.2.2.2 is accomplished by verifying that the SFRCS bypasses cannot be added prior to decreasing main steam line pressure below the appropriate TS values and that the bypasses are automatically removed prior to exceeding the appropriate TS values. The proposed change is an administrative change and is acceptable to the staff.

4.5 Proposed change: Revise TS Bases 3/4.3.1 and 3/4.3.2, "Reactor Protection System and Safety System Instrumentation," by adding the following paragraph:

> "SFAS Table 3.3-3, Action 10, and SFRCS Table 3.3-11, Action 16, allow entry into the ACTION statement to be delayed for up to 8 hours when a channel is placed in an inoperable status solely for performance of a CHANNEL FUNCTIONAL TEST, provided a sufficient number of channels remain OPERABLE. This 8-hour allowance allows reasonable time to perform the required surveillance testing without having to enter the ACTION statement and implement the required ACTIONS."

Evaluation: The proposed changes to the TS Bases reflect the proposed TS changes and, therefore, are acceptable to the staff.

5.0 ENVIRONMENTAL CONSIDERATIONS

The amendment changes the requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or change the surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (66 FR 29356). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Ohio State official was notified of the proposed issuance of the amendment. The State official had no comments.

7.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principle Contributors: S.V. Althavale, EEIB/DE
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Date: September 29, 2003